



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,432	02/10/2004	Junichiro Sakata	740756-2713	1672

22204 7590 02/10/2006

NIXON PEABODY, LLP  
401 9TH STREET, NW  
SUITE 900  
WASHINGTON, DC 20004-2128

EXAMINER

LEE, CHEUNG

ART UNIT PAPER NUMBER

2812

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/774,432

Applicant(s)

SAKATA ET AL.

Examiner

Cheung Lee

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-28 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 17-28 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12-08-05.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Notice to Applicant***

1. Applicants' Amendments and Response to the Office Action mailed on November 23, 2005 have been entered and made of record.

***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on December 8, 2005 was filed after the first action on the merits. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 21, 22, 27, are 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US Pub. 2001/0006827; hereinafter "Yamazaki") in view of second Yamazaki et al. (U.S. Publication 2002/0187567; hereinafter "Yamazaki2").

4. With respect to claims 21 and 27, Yamazaki discloses a method for manufacturing a semiconductor device comprising: depositing an EL material (page 2, paragraph 31; page 6, paragraphs 75-79) over a substrate (704; page 6, paragraph 76) by moving or reciprocating an evaporation source (705; page 6, paragraph 76) in the X direction (fig. 7; page 1, paragraph 14), but Yamazaki does not disclose expressly depositing EL material over a substrate while moving the substrate in the Y direction at a constant speed.

Yamazaki<sup>2</sup> discloses a method of forming a film over a substrate while moving the substrate in the Y direction (page 3, paragraph 56). And it would have been obvious to have the substrate moves in the Y direction at constant speed to form a uniform film thickness.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Yamazaki<sup>2</sup> with Yamazaki to develop the formation of a film over a substrate while moving both an evaporation source and the substrate in perpendicular direction to each other. The motivation for doing so would have been to achieve excellent film thickness uniformity without needing to prolong a distance between the substrate and the evaporation source.

5. With respect to claims 22 and 28, Yamazaki discloses a method for manufacturing a semiconductor device as set forth in claims 21 and 27, but Yamazaki does not disclose expressly wherein the semiconductor device is incorporated into an electronic apparatus selected from the group consisting of a video camera, a digital camera, a goggle display, a navigation system, an audio reproducing apparatus, a

laptop computer, a game machine, a mobile computer, a cellular phone, a portable game machine, an electronic book, and an image reproducing apparatus.

Yamazaki2 discloses wherein the semiconductor device (page 9, paragraph 152) is incorporated into an electronic apparatus (pages 9 and 10, paragraphs 152-161) selected from the group consisting of a video camera (fig. 10G), a digital camera (fig. 10B), a goggle display (fig. 10F), a navigation system, an audio reproducing apparatus, a laptop computer (fig. 10C), a game machine, a mobile computer (fig. 10D), a cellular phone (fig. 10H), a portable game machine, an electronic book, and an image reproducing apparatus (fig. 10E). Both Yamazaki and Yamazaki2 disclose a method of forming light emitting device (EL display device). Since Yamazaki discloses EL display device formation (pages 5 and 6, paragraph 72-84), the examiner takes the position that it would have been obvious that the device made is incorporated into various electronic equipments, as taught Yamazaki2 to obtain higher production efficiency.

6. Claims 17, 19, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki in view of Takacs et al. (US Pat. 6244212; hereinafter "Takacs").

7. With respect to claims 17 and 23, referring to figures 1A-8, Yamazaki discloses a method for manufacturing a semiconductor device comprising: depositing [Claim 17] a film, [Claim 23] an EL material (page 2, paragraph 31; page 6, paragraphs 75-79) over a substrate (704; page 6, paragraph 76) by repeatedly moving an evaporation source 705 in an X direction (fig. 7; page 1, paragraph 14), but Yamazaki does not disclose

expressly depositing EL material over a substrate while moving the substrate in a Y direction at regular intervals.

Referring to figures 1-3, Takacs discloses an evaporator 42, which slides one direction, while a substrate 70 travels in perpendicular direction of the evaporator's slide direction at regular intervals (col. 4, lines 31-67).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the X and Y movements of the evaporator and the substrate respectively, as taught by Takacs.

The motivation for doing so would have been to achieve highly uniform films formation while forming uniform patterns of the films.

8. With respect to claims 19 and 25, Yamazaki discloses a method for manufacturing a semiconductor device comprising: depositing [Claim 19] a film, [Claim 25] an EL material (page 2, paragraph 31; page 6, paragraphs 75-79) over a substrate (704; page 6, paragraph 76) by repeatedly moving the substrate in a Y direction at regular intervals (fig. 7; page 6, paragraphs 75-79). According to Yamazaki, the conveyed substrate (page 2, paragraph 32; page 6, paragraph 76) repeatedly moves and stops in one direction for formation of each EL materials (fig. 7; page 6, paragraphs 75-79). So, the examiner takes the position that it would have been obvious that the substrate movement would be at regular intervals to deposit films. Also, Yamazaki discloses expressly making a movement speed of a first evaporation source in an X direction and a movement speed of a second evaporation source in the X direction different, wherein the first evaporation source and the second evaporation source are

Art Unit: 2812

provided in a same chamber (fig. 7, page 6, paragraphs 75-79). As Yamazaki discloses in page 6, paragraphs 75-79, there are several different evaporation chambers (703, 706, etc.) each having an evaporation source that moves in perpendicular direction to the direction of the conveyed substrate (fig. 7). The layers deposited in different chambers have different characteristics. So, the examiner takes the position that it would have been obvious that the movement speed between evaporation sources would be different to achieve layers of different characteristic. Since all the evaporation chambers are connected to each other, the examiner interprets each evaporation chambers as a compartment to obtain one whole system as shown in figure 7, and the whole system is considered as one chamber. Therefore, the first and the second evaporation sources are provided in a same chamber. However, Yamazaki does not disclose expressly wherein moving the substrate in Y direction while moving the first and the second evaporation sources in X direction.

Referring to figures 1-3, Takacs discloses an evaporator 42, which slides one direction, while a substrate 70 travels in perpendicular direction of the evaporator's slide direction at regular intervals (col. 4, lines 31-67). The motivation and arguments stated in claims 17 and 23 also apply.

9. Claims 18, 20, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki in view of Takacs, as applied above, and further in view of second Yamazaki<sup>2</sup>.

Yamazaki in view of Takacs does not disclose expressly wherein the semiconductor device is incorporated into an electronic apparatus selected from the group consisting of a video camera, a digital camera, a goggle display, a navigation system, an audio reproducing apparatus, a laptop computer, a game machine, a mobile computer, a cellular phone, a portable game machine, an electronic book, and an image reproducing apparatus.

Yamazaki2 discloses wherein the semiconductor device (page 9, paragraph 152) is incorporated into an electronic apparatus (pages 9 and 10, paragraphs 152-161) selected from the group consisting of a video camera (fig. 10G), a digital camera (fig. 10B), a goggle display (fig. 10F), a navigation system, an audio reproducing apparatus, a laptop computer (fig. 10C), a game machine, a mobile computer (fig. 10D), a cellular phone (fig. 10H), a portable game machine, an electronic book, and an image reproducing apparatus (fig. 10E). Both Yamazaki in view of Takacs and Yamazaki2 disclose a method of forming light emitting device (EL display device). Since Yamazaki discloses EL display device formation (pages 5 and 6, paragraph 72-84), the examiner takes the position that it would have been obvious that the device made is incorporated into various electronic equipments, as taught Yamazaki2 to obtain higher production efficiency.

### ***Response to Arguments***



10. Applicants' arguments with regard to the rejections under 35 U.S.C. 103(a) for claims 21-22 and 27-28 have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

11. Applicants argued that there is no motivation in Yamazaki and Yamazaki2 that would have led one of ordinary skill in the art to combine the two references. However, the motivation for combining the references were given in the rejection.

12. The examiner combined Yamazaki2 with Yamazaki for moving the substrate in the Y direction only. Note that applicants' arguments are largely directed to what the cited reference teaches individually. However, it is axiomatic that one cannot show nonobviousness by attacking references individually where the rejection, as here, is based on a combination of references. *In re Young*, 403 F.2d 754, 159 USPQ 725 (CCPA 1968); *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). For example, applicants argued that Yamazaki2 does not disclose an evaporation source, and the step of evaporating an EL material. However, Yamazaki, not Yamazaki2, is employed in the rejection to show that feature of the claimed process. And, the combination of Yamazaki and Yamazaki2 shows moving the evaporation source while moving the substrate as claimed.

### ***Response to Amendment***

13. In view of Applicants' Amendments and arguments, the rejections of claims 17-20 and 23-26 under 35 U.S.C. 103(a) have been withdrawn. Applicants' arguments have been rendered moot in view of the new ground of rejection given above.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheung Lee whose telephone number is 571-272-5977. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2812

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheung Lee

February 3, 2006



**HANGUYEN  
PRIMARY EXAMINER**